

REMARKS

Claims 21, 23, 26, and 28-30 are pending in the current application, with claims 31 and 32 being withdrawn. Claims 21, 23, 26, and 28-30 currently stand rejected. Reconsideration and withdrawal of the current rejections are respectfully requested in light of the following remarks.

Claim Rejections – 35 U.S.C. 103

Claims 21-26 and 28-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US Pat 6,735,267 to Orii et al. (“Orii”) in view of US Pat 5,068,082 to Ueda et al. (“Ueda”) and US Pat 5,229,068 to Johansson et al. (“Johansson”). Applicants respectfully traverse this rejection for the reasons detailed below.

In response to Applicants’ previous response amending the claims and traversing the rejections thereto, the Examiner alleges that the Board found ranges recited in claims 21 and 29 merely a matter of optimization or routine experimentation and, further, that Applicants have admitted the same in the specification as filed. Applicants respectfully disagree.

Claim 21 was amended in the previous response to incorporate the length ranges recited in both claims 22 and 24, each of which originally depended from claim 21 alone. The length range of claim 22 and the length range of claim 24 had never previously been presented or considered in combination, during examination or appeal. Where the Board spoke with respect to the lack of criticality or unexpected results in a rod length range, it

did so with regard only to claim 24's recitation of a single range. See March 31, 2008 Decision on Appeal, p. 13. The length ranges of claim 22 and the amendments adding length ranges to claim 29 were not considered on appeal at all, alone or in combination. See March 31, 2008 Decision on Appeal, p. 12. Thus, the Board's decision has no *res judicata* effect with regard to claims 21 or 29 as amended in the previous response, insofar that the rejection to these claims is traversed below based upon the combination of the length ranges not previously claimed or considered. See MPEP § 706.07(h)(XI).

Applicants respectfully reiterate that none of Orii, Ueda, or Johnson teaches or suggests two distinct rod groups each having unique lengths as recited by lengths of "about 0.1 to about 0.4 of the full-length rods" for the first group and "about 0.6 to about 0.9 of the full-length rods" for the second group. Rather, each of these references disclose **only the second group lengths alone** by teaching that part-length rods having a minimum length of 0.46. See Orii, Equation 4; Col. 13, ll. 5-9 (length of $11/24$ or greater of full length rod); Ueda, Col. 14, ll. 51-66; Fig. 25A (length of $1/2$ of full length rod); Johansson, FIGS. 3A-3F (length of about $5/9$ of full length rod). Because the recited length ranges **in combination** are not found in any of the applied references, it cannot be a matter of optimization to find the recited ranges within prior art conditions.

The Examiner further replies that the specification teaches that the recited group lengths in combination are only a matter of optimization. Applicants respectfully submit that the Examiner has identified a passage from

the “Summary of the Invention” section of the specification. See Specification as Filed, ¶ [0010]. Nothing in that section remotely suggests that Applicants are characterizing the work of another. Nor does that section suggest that such optimization is applicable outside of the unique length ranges recited in claims 21 and 29, discussed above, to meet the same. Thus, the specification does not and cannot apply as prior art teaching or suggesting the recited combination of length ranges or optimization to reach the same, nor has the Examiner provided any external reference doing so. See MPEP § 2921(I).

Lastly, the modification of Orii to meet the missing recited ranges in combination is impermissible under § 103(a), because Orii teaches away from the recited ranges in combination, and none of the secondary references cure this teaching away. Particularly, Orii requires that each of its embodiments meet a disclosed Equation 4 for part-length rod length, which requires that any part length rod be at least 45.83% of the length of the full length rods. See Orii, Equation 4, throughout the disclosure; FIGS. 7, 10, 13, and 16 (all showing permissible range ending at $11/24$ length ratio). Critically, Orii states:

“When the effective fuel length of the short length fuel rod 2B is made shorter than $11/24$ as described above, the uranium inventory becomes too small to deteriorate the fuel cycle cost. Therefore, **the value L_p/L_f must be larger than $11/24$** (Equation 4).”

Orii, Col. 8, ll. 2-6 (emphasis added). This clearly teaches only the recited length ranges of “about 0.6 to about 0.9 of the full-length rods” and teaches away from any group with the recited ranges under about 0.4 in combination therewith.

Ueda and Johansson do not cure this teaching away. As discussed above, none of these references depart from the length limitations of Orii into the recited short-length rod range. Further, none of Ueda and Johansson correct Orii's teaching away by suggesting satisfactory uranium inventories in the recited length ranges. Thus, it is improper to modify the disclosed ranges of the applied references to meet the two, unique ranges under § 103(a). See KSR Int'l Co. v. Teleflex, Inc., 550 U.S. ___, slip. op. 04-1350 at 12 (2007) ("when the prior art teaches away from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious."); see also MPEP §§ 2141, 2143.

Because Orii, alone or in combination with Ueda and Johansson, fails to teach each and every element of claims 21 and 29 and cannot be modified to do so, these references cannot anticipate or render obvious claim 21. Claims 23, 26, 28, and 30 are allowable at least for depending from an allowable base claim. Withdrawal of the rejection under 35 U.S.C. § 103(a) to claims 21, 23, 26, and 28-31 is respectfully requested.

Improper Finality of Office Action

The Examiner indicates that the June 23, 2008 Office Action is final and that such finality is proper because all claims in Applicants' response filed June 2, 2008 with a Request for Continued Examination were drawn to the same invention as previously entered. Applicants respectfully disagree. As

discussed above, claim 21 was amended in the June 2nd response to incorporate the subject matter of claims 22 and 24, each of which originally depended from claim 21 alone. Claims 22 and 24 had never previously been presented or considered in combination. Thus, the amendment to claim 21 incorporating both claims 22 and 24 in that claim presented subject matter never claimed before in combination. Moreover, claims 29-32 were also amended in the June 2nd response to include subject matter never presented in those claims, either independently or through dependent claims. Thus, all claims in the June 2nd response were not drawn an invention previously claimed, and the finality of the June 23rd Office Action is not proper under MPEP § 706.07(b). Withdrawal of the finality of the June 23rd Office Action, and entry of this Reply under 37 C.F.R. § 1.111, are respectfully requested.

CONCLUSION


Accordingly, in view of the above amendments and remarks, reconsideration of the objections and rejections and allowance of each of claims 21, 23, 26, and 28-31 in connection with the present application is earnestly solicited.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Ryan Alley at the telephone number of the undersigned below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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